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**"AS-BUILT" DESIGN SPECIFICATION
FOR THE
INDIA MONTHLY DATA BASE**

Job Order 74-963

AD 63-1347-4963-04

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**(E80-10264) AS-BUILT DESIGN SPECIFICATION
FOR THE INDIA MONTHLY DATA BASE (Lockheed
Electronics Co.) 20 p HC A02/MF A01**

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**Prepared By
Lockheed Electronics Company, Inc.
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Houston, Texas
Contract NAS 9-15200**

**For
EARTH OBSERVATIONS DIVISION
SCIENCE AND APPLICATIONS DIRECTORATE**



**National Aeronautics and Space Administration
LYNDON B. JOHNSON SPACE CENTER**

Houston, Texas

February 1977

LEC-10253

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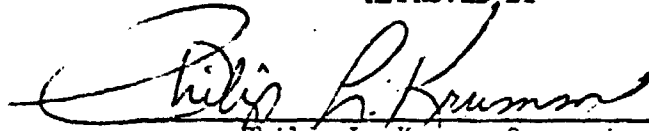
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Earth Observations Division

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
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1. SCOPE

This document specifies design of the monthly weather and yield data base for India, following the same design as those previously documented for Australia, Canada, the U.S., and the U.S.S.R. in the "As Built Design Specification for the Yield Estimation Subsystem (YES) Monthly Yield Data Base and Supporting Programs" (JSC-12537/LEC-10034).

2. APPLICABLE DOCUMENTS

AD 63-1347-4963-01

AD 63-1347-4963-04

This documentation completes AD-04.

3. SYSTEM DESCRIPTION

3.1 HARDWARE DESCRIPTION

These data, and supporting programs previously documented in "As-Built Design Specification" (JSC-12537/LEC-10034), are resident on the IBM 360/195 complex at Suitland, Maryland. They should be transferable to any IBM 360-370 series machine with sufficient disk to handle the data base and main memory to support the PL/I optimizing compiler.

3.2 DATA BASE STRUCTURE

The monthly weather and yield data base is a tree structure, with nodes, or levels, being the country, region, state and subdivision. Respectively, these levels refer to India, the wheat areas, Indian political states, and subdivisions within the states. The number of subdivisions per state varies from one (the state itself) to four.

3.2.1 DATA BASE STORAGE REQUIREMENTS

The data set for India occupies 114 6440-byte blocks.

3.2.2 CONTROL AND DIRECTORY BLOCKS

See "As-Built Design Specification" (JSC-12537/LEC-10034) for definitions and structures.

3.2.3 DATA DESCRIPTORS AND DATA BLOCKS

The format for the data descriptors and data blocks follows that previously defined in "As-Built Design Specification".

At the present time, yield variables and mean monthly temperature are stored at the state level; the state mean monthly temperature and subdivision monthly precipitation are stored at the subdivision level. Space has been reserved at the subdivision level for yield variable data, in the event that this data becomes available in the future.

3.2.4 MODEL DEFINITION BLOCK

At this time, no model definition block for India exists; no CCEA-type model for India has yet been developed.

4. OPERATION

4.1 DATA BASE INITIALIZATION AND DEFINITION

Data base initialization and definition were accomplished using the supporting programs documented in "As-Built Design Specification". (JSC-12537/LEC-10034).

4.2 DATA BASE LOADING

The data base was loaded using the updating program UPDDATA, documented in "As-Built Design Specification."

4.3 DATA BASE LISTING

The control block and directories may be listed using YESLS02 and YESLS04 respectively, from "As-Built Design Specification." To list data, LISTJOB (also from "As-Built Design Specification") will have to be modified to accomodate data for India.

APPENDIX A
STRUCTURE

INDIA DATA YEAR ENTRY

There is a maximum of 60 years following the data descriptor entry in a data block for each Indian state and subdivision; each year entry is 100 bytes long.

DCL 1 INDIA,	
2 YEAR	FIXED BIN(15,0),
2 NXYRREC	FIXED BIN(15,0),
2 NXYRDISP	FIXED BIN(15,0),
2 FILLER(13)	FIXED BIN(15,0),
2 MEANTEMP(12)	FIXED BIN(15,0),
2 PRECIP(12)	FIXED BIN(15,0),
2 IRRIGATED(2)	FIXED BIN(15,0),
2 HARVESTED(2)	FIXED BIN(31,0),
2 PRODUCTION(2)	FIXED BIN(31,0);

ORIGINAL PAGE 1
OF 6

APPENDIX B
VARIABLE CODES

Meteorological Variables

Precipitation	5
Mean temperature	35

Yield Variables

Irrigated wheat area	71
Harvested	101
Production	103

Crops

Winter wheat	202
--------------	-----

Unit of measurement

Percent	171
Millimeters	201
Quintals	228
Hectares	236
Degrees Centigrade	241

Others

Monthly	26
Year	61
Pointer	90
Record pointer	91
Displacement pointer	92
Filler	99

APPENDIX C
LISTING OF CONTROL BLOCK,
DIRECTORIES AND DATA DESCRIPTORS

3. $1 + 2G = Gk, \forall k \in \mathbb{N}$.

WILLIAMS
SHOOTS
DIVISION

WILLIAMS CENTIGRADE
OFFS
ECTAPES
QUINTALS
PERCENT ALL WHEAT AREA

2	0	PRECIPITATION
2	-1	MEAN TEMPERATURE
4	0	MAXIMUM
4	0	MINIMUM
4	0	DEW POINT
3	0	RELATIVE HUMIDITY
2	-1	IRRIGATED WHEAT AREA
1	7	WIND VELOCITY
2	0	YEAR
2	0	MONTH
2	0	SECOND POINT
2	0	DISPLACEMENT POINT
2	0	FILE

END OF COMM-40

• 90544WU=U6=U6WU3d6 •

• COMPANY = DEF INC

1	250-7400	INDIA	1	0000000000
2	250-7400	WEST AFENS	2	1000000000
3	250-7400	INDIA	3	1000000000
4	250-7400	WEST AFENS	4	1000000000
5	250-7400	INDIA	5	1000000000
6	250-7400	WEST AFENS	6	1000000000
7	250-7400	INDIA	7	1000000000
8	250-7400	WEST AFENS	8	1000000000
9	250-7400	INDIA	9	1000000000
10	250-7400	WEST AFENS	10	1000000000
11	250-7400	INDIA	11	1000000000
12	250-7400	WEST AFENS	12	1000000000
13	250-7400	INDIA	13	1000000000
14	250-7400	WEST AFENS	14	1000000000
15	250-7400	INDIA	15	1000000000
16	250-7400	WEST AFENS	16	1000000000
17	250-7400	INDIA	17	1000000000
18	250-7400	WEST AFENS	18	1000000000
19	250-7400	INDIA	19	1000000000
20	250-7400	WEST AFENS	20	1000000000
21	250-7400	INDIA	21	1000000000
22	250-7400	WEST AFENS	22	1000000000
23	250-7400	INDIA	23	1000000000
24	250-7400	WEST AFENS	24	1000000000
25	250-7400	INDIA	25	1000000000
26	250-7400	WEST AFENS	26	1000000000
27	250-7400	INDIA	27	1000000000
28	250-7400	WEST AFENS	28	1000000000
29	250-7400	INDIA	29	1000000000
30	250-7400	WEST AFENS	30	1000000000
31	250-7400	INDIA	31	1000000000
32	250-7400	WEST AFENS	32	1000000000
33	250-7400	INDIA	33	1000000000
34	250-7400	WEST AFENS	34	1000000000
35	250-7400	INDIA	35	1000000000
36	250-7400	WEST AFENS	36	1000000000
37	250-7400	INDIA	37	1000000000
38	250-7400	WEST AFENS	38	1000000000
39	250-7400	INDIA	39	1000000000
40	250-7400	WEST AFENS	40	1000000000
41	250-7400	INDIA	41	1000000000
42	250-7400	WEST AFENS	42	1000000000
43	250-7400	INDIA	43	1000000000
44	250-7400	WEST AFENS	44	1000000000
45	250-7400	INDIA	45	1000000000
46	250-7400	WEST AFENS	46	1000000000
47	250-7400	INDIA	47	1000000000
48	250-7400	WEST AFENS	48	1000000000
49	250-7400	INDIA	49	1000000000
50	250-7400	WEST AFENS	50	1000000000

410161600
410170000
410171300

44 = 1
46 = 1

300-7590 JAMU AND KASHMIR
2860-7720 DELHI
2860-7720 NF DELHI
**END OF COMMAND
**COMMAND=DEF LINE
410010000 0 91 92
61 1 26
99 1 26
35 1 202
71 1 202
103 1 202
410011400 0 91 92
61 1 26
99 1 26
35 1 202
71 1 202
103 1 202
410020000 0 91 92
61 1 26
99 1 26
35 1 202
71 1 202
103 1 202
410021300 0 91 92
61 1 26
99 1 26
35 1 202
71 1 202
103 1 202
410030000 0 91 92
61 1 26
99 1 26
35 1 202
71 1 202
103 1 202
410031000 0 91 92
61 1 26
99 1 26
35 1 202
71 1 202
103 1 202
410031100 0 91 92
61 1 26
99 1 26
35 1 202
71 1 202
103 1 202

44 = 1
46 = 1

12

[illegible]

ORIGINAL PAGE IS
OF POOR QUALITY

101 2 4 1 202
103 2 4 1 202
♦♦END OF COMMAND

C-8